



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/637,841	08/08/2003	William Delaplaine Green		3345

7590 12/21/2006
WILLIAM D. GREEN
8906 CAMDEN STREET
ALEXANDRIA, VA 22308-2715

EXAMINER

ALI, HYDER

ART UNIT	PAPER NUMBER
----------	--------------

3747

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	12/21/2006	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary

Application No.

10/637,841

Applicant(s)

GREEN, WILLIAM DELAPLAINE

Examiner

HYDER ALI

Art Unit

3747

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 27 September 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-39 and 41-82 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 22,26-39,41-52,64-67 and 82 is/are allowed.
- 6) ☒ Claim(s) 1,2,23-25,53-63,68-73 and 75-80 is/are rejected.
- 7) ☒ Claim(s) 3-21,74 and 81 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 08 August 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

Art Unit: 3747

DETAILED ACTION

Claim 28 "the intake valve" should read "the intake valve means". Appropriate correction is required.

Response to Amendment

1. *A complete listing of all of the claims is not present.*
2. *Each claim has not been provided with the proper status identifier, and as such, the individual status of each claim cannot be identified. Note: the status of every claim must be indicated after its claim number by using one of the following 7 status identifiers: (Original), (currently amended), (Canceled), (Withdrawn), (Previously presented), (New) and (Not entered).*

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

1. **Claims 1,2,23-25,53-56,58,60-63,68-73 and 75-80 are rejected under 35 U.S.C. 102(b) as being anticipated by Rowells (US 5,634,447).**

As to Claim 1, **Rowells** discloses in a two cycle internal combustion engine having housing means to provide the necessary spaces in the engine, compressor means 34 to force combustible material into the engine, fuel injection means 25 to inject fuel into the engine for combustion, reciprocating means 28 to compress combustible material held

Art Unit: 3747

within said housing means between the compressor means 34 and the reciprocating means 28 to cause detonation of said combustible material, wherein the improvement comprises the compressor means 34 can compress more combustible material to the combustion process after detonation commences. **See Fig. 2, col. 3, lines 25-28 (the exhaust valve 30 is opened by the conventional compression relief device 32 and the energy of the compressed air plus the additional energy created by the pre-top dead center combustion is routed to the turbocharger 34 which in turn further compresses the intake air).**

As to Claim 2, **Rowells** discloses wherein the reciprocating means 28 includes crankshaft means to cause reciprocating motion of a reciprocating part 28, receive a power transfer from the reciprocating part during combustion, and output engine torque. As to Claim 23, **Rowells** discloses a two cycle internal combustion engine having housing means to provide the necessary spaces in the engine, compressor means 34 to force combustible material into the engine, fuel injection means 25 to inject fuel into the engine for combustion, reciprocating means 28 to compress combustible material held within said housing between said reciprocating means 28 and said compressor means 34 to cause detonation of said combustible material so the compressor means 34 can compress more combustible material into the combustion process after detonation commences, wherein the improvement comprises valve means to control the movement of fluids within the engine. **See Fig. 2, col. 3, lines 25-28 (the exhaust valve 30 is opened by the conventional compression relief device 32 and the energy of the compressed air plus the additional energy created by the pre-top dead center**

Art Unit: 3747

combustion is routed to the turbocharger 34 which in turn further compresses the intake air).

As to Claim 24, **Rowells** discloses a two cycle internal combustion engine having housing means to provide the necessary spaces in the engine, compressor means 34 to force combustible material into the engine, fuel injection means 25 to inject fuel into the engine for combustion, reciprocating means 28 to compress combustible material held within said housing between said reciprocating means 28 and said compressor means 34 to cause detonation of said combustible material so the compressor means 34 can compress more combustible material into the combustion process after detonation commences, wherein the improvement comprises ignition means 25 to control when combustion begins. **See Fig. 2, col. 3, lines 25-28 (the exhaust valve 30 is opened by the conventional compression relief device 32 and the energy of the compressed air plus the additional energy created by the pre-top dead center combustion is routed to the turbocharger 34 which in turn further compresses the intake air).**

As to Claim 25, **Rowells** discloses a two cycle internal combustion engine having housing means to provide the necessary spaces in the engine, compressor means 34 to force combustible material into the engine, fuel injection means 25 to inject fuel into the engine for combustion, reciprocating means 28 to compress combustible material held within said housing between said reciprocating means 28 and said compressor means 34 to cause detonation of said combustible material so the compressor means 34 can compress more combustible material into the combustion process after detonation

commences, wherein the improvement comprises throttle means to control the flow of combustible material into the engine. **See Fig. 2, col. 3, lines 25-28 (the exhaust valve 30 is opened by the conventional compression relief device 32 and the energy of the compressed air plus the additional energy created by the pre-top dead center combustion is routed to the turbocharger 34 which in turn further compresses the intake air).**

As to Claim 53, Rowells discloses a method for internal combustion engine, which comprises: compressing a fuel within a housing means between a compressor means 34 and a reciprocating means 28 to cause combustion wherein the energy of combustion is transferred to said reciprocating means 28 and said compressor means 34.

As to Claim 54, Rowells discloses said compressor means 34 is rotationally connected to said reciprocating means 28.

As to Claim 55, Rowells discloses fuel injection means 25 injects fuel into said housing means.

As to Claim 56, Rowells discloses a method for a internal combustion engine 10, which comprises: compressing a fuel within a housing means between a compressor means 34 and a reciprocating means 28 wherein the energy of combustion is transferred to said reciprocating means 28 and said compressor means 34.

As to Claim 58, Rowells discloses apparatus for a internal combustion engine 10, which comprises housing means; compressor means 34; reciprocating means 28; fuel supply means 25; means to compress fuel between said compressor means 34 and

Art Unit: 3747

said reciprocating means 28 to initiate combustion, wherein the power of combustion is transferred to said reciprocating means 28 and said compressor means 34.

As to Claim 60, Rowells discloses cooling means (not numbered).

As to Claim 61, Rowells discloses lubrication means (inherent).

As to Claim 62, Rowells discloses valve means 30.

As to Claim 63, Rowells discloses bearing means (inherent to support crankshaft 21).

As to Claim 68, Rowells discloses an internal combustion engine comprising: a housing providing necessary spaces in the engine; a compressor 34 for forcing combustible material into the engine; a fuel injector 25 for injecting fuel into the engine for combustion; and a reciprocating assembly 28,21 for compressing combustible material held within said housing between the compressor 34 and said reciprocating assembly 28,21 for causing detonation of said combustible material, wherein said compressor 34 can compress additional combustible material after detonation commences. **See col. 5, lines 15-20 and col. 6, lines 1-5.**

As to Claim 69, Rowells discloses wherein compressor 34 is rotationally connected to said reciprocating assembly.

As to Claim 70, wherein said compressor 34 is a positive displacement compressor (optional design choice).

As to Claim 71, wherein said compressor is a gear pump compressor (optional design choice).

As to Claim 72, Rowells discloses wherein said reciprocating assembly comprises a reciprocating piston 28.

As to Claim 73, Rowells discloses wherein said reciprocating assembly comprises a crankshaft 21, a connecting rod and a piston assembly 28.

As to Claim 75, Rowells discloses a method of operating an engine comprising: providing an engine having a housing that provide necessary spaces in the engine; a compressor 34 for forcing combustible material into the engine; a fuel injector 25 for injecting fuel into the engine for combustion; and a reciprocating assembly; providing combustible material to said compressor 34; providing fuel to said fuel injector 25; detonating said combustible material; and compressing additional combustible material after the step of detonating commences. **See col. 5, lines 15-20 and col. 6, lines 1-5.**

As to Claim 76, Rowells discloses wherein compressor 34 is rotationally connected to said reciprocating assembly.

As to Claim 77, wherein said compressor 34 is a positive displacement compressor (optional design choice).

As to Claim 78, wherein said compressor is a gear pump compressor (optional design choice).

As to Claim 79, Rowells discloses wherein said reciprocating assembly comprises a reciprocating piston 28.

As to Claim 80, Rowells discloses wherein said reciprocating assembly comprises a crankshaft 21, a connecting rod and a piston assembly 28.

2. Claims 57 and 59 are rejected under 35 U.S.C. 102(b) as being anticipated by Nohira et al (US 4,318,273).

As to Claim 57, Nohira et al discloses a method for internal combustion engine, which comprises: compressing a fuel within a housing means between a compressor means 17 and a reciprocating means 3 to cause combustion wherein the energy of combustion is transferred to said reciprocating means 3 and said compressor means 17; wherein fuel injection means 32 injects fuel into said housing means; and spark ignition means 8 initiates combustion.

As to Claim 59, Nohira et al discloses a method for internal combustion engine, which comprises: compressing a fuel within a housing means between a compressor means 17 and a reciprocating means 3 to cause combustion wherein the energy of combustion is transferred to said reciprocating means 3 and said compressor means 17; wherein fuel injection means 32 injects fuel into said housing means; and having spark ignition means 8.

Allowable Subject Matter

Claims 22,26-39,41-52,64-67,82 are allowed.

Claims 3-21,74 and 81 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Response to Arguments

Applicant's arguments with respect to claims 1-39,41-82 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to HYDER ALI whose telephone number is (571) 272-4836. The examiner can normally be reached on M-F (8:30-5:00).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stephen Kirk Cronin can be reached on (571) 272-4536. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



ha